

ABSTRACT

The present invention provides a method and system for online health condition monitoring of rotary machinery such as printing presses. The rotary machines have one or more stages and each stage has one or more rotary components. The method comprises the steps of: receiving one or more signals from sensors at each of the rotary units or bearing housings; generating an error matrix and diagnosing rotation synchronization errors among the different stages; generating error matrices using different signal processing techniques and diagnosing the health conditions of rotary components such as gears, bearings and shafts; and identifying the stages and rotary components having imperfections by comparing the current error matrices to stored reference error matrices. The present invention can also be used in other applications involving rotational components such as automobiles, airplanes, and power turbines to name a few.